

**REMARKS**

Claims 13 and 18-20 are all the claims pending in the application.

Claims 13 and 19 have been amended to further clarify Applicant's claimed invention.

**PRIOR ART REJECTIONS**

The Examiner has rejected claims 13 and 19 under 35 U.S.C. § 102(e) as being anticipated by Shirouzu. Applicant traverses these rejections because Shirouzu fails to disclose all of the claim limitations. Specifically, Shirouzu fails to disclose at least the following limitations:

**Claim 13:**

a second element which separates a color brightness data, *expressed in a brightness-separable color space where color can be expressed by being separated into brightness and chromaticity*, of said background and each of said partial straight lines; and

a third element which produces a shading range having a starting point and a ending point, wherein said shading range is adjacent to one of said partial straight lines, and makes the brightness of said shading range change smoothly *in said brightness-separable color space*, from said starting point to said ending point by placing the brightness data of said background at said starting point and the brightness data of said straight line at said ending point.

**Claim 19:**

a second element which separates a color brightness data, *expressed in a brightness-separable color space where color can be expressed by being separated into brightness and chromaticity*, of said background and each of said partial straight lines; and

a third element which produces shading ranges having a starting point and a ending point, wherein said shading ranges are adjacent to said partial straight lines, respectively, and make the brightness of each of said shading ranges change smoothly *in said brightness-separable color space*, from said starting point to said ending point by placing the brightness data of said background at said starting point and the brightness data of said straight line at said ending point.

In the present invention of claims 13 and 19, the second element separates color brightness data, expressed in a brightness-separable color space where color can be expressed by

being separated into brightness and chromaticity, of the background and each of the partial straight lines; and the third element makes the brightness of the shading range change smoothly in the brightness-separable color space, from the starting point to the ending point.

On the other hand, in Shirouzu, the intensity interpolator 106 performs intensity interpolation based on the current intensity data 125 and pixel intensity data 126. Current intensity data 125 indicates the intensity of current area before display of the line and pixel intensity data 126 indicates the intensity of the line to be drawn.

Drawing intensity data 128 of a determined pixel is delivered out of the intensity interpolator 106 (col. 4, lines 21-46). However, Shirouzu does not take into account that human visual characteristics are sensitive to a change of brightness rather than a change of chromaticity. Shirouzu is silent about separating a color brightness data, expressed in a brightness-separable color space where color can be expressed by being separated into brightness and chromaticity, of the background and each of the partial straight lines; and making the brightness of the shading range change smoothly in the brightness-separable color space where color can be expressed by being separated into brightness and chromaticity, from the starting point to the ending point.

Applicant also notes that Tachibana, cited below in connection with the rejection of claims 18 and 20, also fails to disclose the limitations identified above. In Tachibana, DDA 2 receives the parameters and a drawing instruction, generates line data according to anti-aliasing conditions, and draws the line in a bitmap in the frame buffer 3. More precisely, DDA 2 has a unit for generating the address and intensity value of each of the pixels that are plotted to form the line between start and end points in the bitmap in the frame buffer 3, a unit for storing the generated intensity value of each pixel in the frame buffer 3 at an address corresponding to the

pixel, and a unit for changing the intensity value of each pixel according to anti-aliasing conditions (col. 5, lines 7-17). However, Tachibana, does not take into account that human visual characteristics are sensitive to a change of brightness rather than a change of chromaticity. Tachibana is silent about separating a color brightness data, expressed in a brightness-separable color space where color can be expressed by being separated into brightness and chromaticity, of the background and each of the partial straight lines; and making the brightness of the shading range change smoothly in the brightness-separable color space where color can be expressed by being separated into brightness and chromaticity, from the starting point to the ending point.

The Examiner has rejected claims 18 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Shirouzu in view of Tachibana. Applicant traverses these rejections because the cited references fail to disclose all of the claim limitations.

First, claims 18 and 20 should be allowable at least based on their dependence from claims 13 and 20 for at least the same reasons describe above.

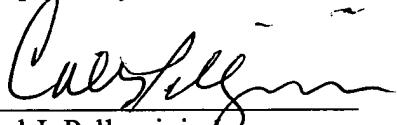
In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.116  
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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

  
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